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10/689,114	10/19/2003	Matthew A. Huras	YOR920030458US1 (590.118)	2917

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EXAMINER
CHEN, QING

ART UNIT	PAPER NUMBER
2191	

MAIL DATE	DELIVERY MODE
12/22/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
	10/689,114	HURAS ET AL.
Office Action Summary	Examiner	Art Unit	
	Qing Chen	2191	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS,
WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed
  after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any
  earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>22 September 2008</u>.

2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is
closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>1-3,5-9,11-14,16-20,22 and 23</u> is/are pending in the application.

     4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) <u>1-3,5-9,11-14, 16-20,22 and 23</u> is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☒ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

     a) ☐ All   b) ☐ Some * c) ☐ None of:

         1. ☐ Certified copies of the priority documents have been received.

         2. ☐ Certified copies of the priority documents have been received in Application No. _____.

         3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage
            application from the International Bureau (PCT Rule 17.2(a)).

     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
     Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail. Date. _____.

5) ☐ Notice of Informal Patent Application

6) ☐ Other: _____.

DETAILED ACTION

1.   This Office action is in response to the RCE filed on September 22, 2008.

2.   **Claims 1-3, 5-9, 11-14, 16-20, 22, and 23** are pending.

3.   **Claims 1, 12, and 23** have been amended.

4.   **Claims 4, 10, 15, and 21** have been canceled.

5.   As previously pointed out in the Notice of Non-Compliant Amendment (mailed on

09/16/2008) and further clarified herein, it is noted that Claim 14 appears to contain no proposed

amendments. However, the claim bears the "Currently Amended" status identifier.

Continued Examination Under 37 CFR 1.114

6.   A request for continued examination under 37 CFR 1.114, including the fee set forth in

37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible

for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been

timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR

1.114. Applicant's submission filed on September 22, 2008 has been entered.

Response to Amendment

Specification

7.   The disclosure is objected to because of the following informalities:

•   The repeated period (.) at the end of the paragraph on page 16, lines 4-16 should be

deleted.

Appropriate correction is required.

<div align="center">*Claim Objections*</div>

8.   **Claims 1-3, 5-9, 11-14, 16-20, 22, and 23** are objected to because of the following

informalities:

- **Claim 1** recites the limitation "the manager module." Applicant is advised to change

  this limitation to read "the manager module arrangement" for the purpose of providing it

  with proper explicit antecedent basis.

- **Claims 1, 12, and 23** recite the limitation "said/the utility." Applicant is advised to

  change this limitation to read "said/the at least one utility" for the purpose of providing it

  with proper explicit antecedent basis.

- **Claims 2, 3, 5-9, and 11** depend on Claim 1 and, therefore, suffer the same

  deficiency as Claim 1.

- **Claims 13, 14, 16-20, and 22** depend on Claim 12 and, therefore, suffer the same

  deficiency as Claim 12.

- **Claim 2** recites the limitation "said arrangement." Applicant is advised to change this

  limitation to read "said manager module arrangement" for the purpose of providing it

  with proper explicit antecedent basis.

- **Claims 3 and 14** contain a typographical error: "[W]herein indicating the presence of

  the at least one utility within the computer system" should presumably read -- wherein

  indicating the presence of the at least one utility with the computer system --.

  Appropriate correction is required.

Claim Rejections - 35 USC § 112

9.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

10.   **Claims 1-3, 5-9, 11-14, 16-20, 22, and 23** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 1, 12, and 23 recite the limitation "several iterations." The term "several" is a relative term which renders the claims indefinite. The term "several" is not defined by the claims nor does the specification provide a standard for ascertaining the requisite degree and one of ordinary skill in the art would not be able to reasonably determine the scope of the invention. In the interest of compact prosecution, the Examiner subsequently does not give any patentable weight to this limitation for the purpose of further examination.

Claims 2, 3, 5-9, and 11 depend on Claim 1 and, therefore, suffer the same deficiency as Claim 1.

Claims 13, 14, 16-20, and 22 depend on Claim 12 and, therefore, suffer the same deficiency as Claim 12.

Claims 11 and 22 recite the limitation "the operating system priority." There is insufficient antecedent basis for this limitation in the claims. In the interest of compact

prosecution, the Examiner subsequently interprets this limitation as reading "an operating system

priority" for the purpose of further examination.

Claim Rejections - 35 USC § 103

11.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in
> section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are
> such that the subject matter as a whole would have been obvious at the time the invention was made to a person
> having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the
> manner in which the invention was made.

12.   **Claims 1-3, 5-9, 11-14, 16-20, 22, and 23** are rejected under 35 U.S.C. 103(a) as being

unpatentable over **US 2003/0088605 (hereinafter "Beghtel")** in view of **US 6,834,386**

(hereinafter "Douceur").

As per **Claim 1**, Beghtel discloses:

-       a manager module arrangement for determining and registering at least one utility

within the computer system, wherein said registering informs the manager module arrangement

of the existence of the at least one utility *(see Paragraph [0021], "Computer subsystem 220 is*

suitable for executing tasks in accordance with the preferred embodiment and comprises high

priority task 210 invoked by an online command utilizing terminal 232 or by JCL 230. Computer

subsystem 220 may also comprise other tasks, such as one or more online transaction tasks

212."); [Examiner's Note: It is inherent that the tasks must be registered first with the computer

subsystem prior to being executed.]

- an arrangement for deriving a throttling level for the at least one utility which quantifies the reduction in the rate at which the at least one utility consumes resources *(see Paragraph [0023], "High priority task 210 receives a throttle specification, in step 310, from the invoking operating system or subsystem. The throttle specification is in the form of a recommended percentage value where the value represents the percentage of CPU cycles available to high priority task 210 to be dedicated to high priority task 210.")*; and

- wherein inserting the derived throttling level is updated dynamically through several iterations of a work loop until said at least one utility has completed its work and then deregisters with the manager module arrangement *(see Figure 3; Paragraph [0025], "In step 320, this unit of work is executed by task 210 and upon completion of this unit of work, in step 325, the operating system service to note the system clock time is invoked once again."; Paragraph [0027], "Following the exhaustion of the calculated suspension time, high priority task 210 is resumed in step 350 and control then returns to step 320 to repeat this process with the next unit of work. Returning now to step 335, if the last unit of work was completed, high priority task 210 terminates (step 355).")*; [Examiner's Note: It is inherent that a task is deregistered with the computer subsystem when it is terminated.]

- wherein said arrangement for optionally inserting the derived throttling level is implemented within the at least one utility, said at least one utility being configured to dynamically self-throttle and not require an operating system to throttle the at least one utility *(see Paragraph [0026], "For example, in the simplest of embodiments, the throttle specification may be a binary indicator directing high priority task 210 to either suspend itself or not. Further, in this simple implementation, the suspension time may be an assigned constant value.")*.

However, <u>Beghtel</u> does not disclose:

-    an arrangement for optionally inserting the derived throttling level at a selected point during execution of the at least one utility.

<u>Douceur</u> discloses:

-    an arrangement for optionally inserting the derived throttling level at a selected point during execution of the at least one utility *(see Column 7: 33-56, "In general, the execution of each task is quantized into time slices, whereby each task is permitted to execute for a set period of real time." and "A task may be given any CPU scheduling priority allowed by the system, e.g., normal priority, but may be throttled by the present invention by only allowing the task to operate for limited time slices at a low frequency relative to how often a foreground process is able to request CPU cycles.").*

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of <u>Douceur</u> into the teaching of <u>Beghtel</u> to include an arrangement for optionally inserting the derived throttling level at a selected point during execution of the at least one utility. The modification would be obvious because one of ordinary skill in the art would be motivated to prevent threads from interfering with each other's work *(see <u>Douceur</u> – Column 7: 22-32).*

As per **Claim 2**, the rejection of **Claim 1** is incorporated; and <u>Beghtel</u> further discloses:

-    wherein said manager module arrangement for determining ascertains whether the at least one utility has indicated its presence with the computer system *(see Paragraph [0021], "Computer subsystem 220 is suitable for executing tasks in accordance with the preferred*

embodiment and comprises high priority task 210 invoked by an online command utilizing

terminal 232 or by JCL 230. Computer subsystem 220 may also comprise other tasks, such as

one or more online transaction tasks 212.").

As per **Claim 3**, the rejection of **Claim 2** is incorporated; and <u>Beghtel</u> further discloses:

-    wherein indicating the presence of the at least one utility with the computer system

comprises the at least one utility registering with a utility manager *(see Paragraph [0021],*

"Computer subsystem 220 is suitable for executing tasks in accordance with the preferred

embodiment and comprises high priority task 210 invoked by an online command utilizing

terminal 232 or by JCL 230. Computer subsystem 220 may also comprise other tasks, such as

one or more online transaction tasks 212.").

As per **Claim 5**, the rejection of **Claim 2** is incorporated; and <u>Beghtel</u> further discloses:

-    wherein the derived throttling level is enforced through a self-imposed sleep *(see*

Paragraph [0027], "Following the calculation of a suspension time in step 340, high priority

task 210 is suspended, in step 345, for the duration of this calculated suspension time.").

As per **Claim 6**, the rejection of **Claim 2** is incorporated; however, <u>Beghtel</u> does not

disclose:

-    wherein the at least one utility is a multi-process utility and the derived throttling

level is enforced by reducing the parallelism of multi-processes.

<u>Douceur</u> discloses:

-   wherein the at least one utility is a multi-process utility and the derived throttling

level is enforced by reducing the parallelism of multi-processes *(see Column 7: 22-32,*

"Although a single task may include multiple threads in order to maintain multiple contexts, in

one implementation, only one thread is permitted to proceed at a time, in order to prevent

threads from interfering with each other's work measurements." and "Task execution alternates

between the threads (as determined by the process) in an attempt to maintain an approximately

constant work queue depth.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of Douceur into the teaching of Beghtel to

include wherein the at least one utility is a multi-process utility and the derived throttling level is

enforced by reducing the parallelism of multi-processes. The modification would be obvious

because one of ordinary skill in the art would be motivated to prevent threads from interfering

with each other's work *(see Douceur – Column 7: 22-32).*

As per **Claim 7**, the rejection of **Claim 2** is incorporated; however, Beghtel does not

disclose:

-   wherein the derived throttling level is enforced by reducing the amount of memory

used by the at least one utility.

Douceur discloses:

-   wherein the derived throttling level is enforced by reducing the amount of memory

used by the at least one utility *(see Column 7: 49-56, "A task may also be given a reduced CPU*

scheduling priority, whereby the CPU scheduling mechanism 116 will further control the cycles

given to the background task 110₁. As represented in FIG. 5, the background task 110, may be

thus limited in how often it is given access to the CPU 21 and/or how often it obtains access to

an I/O resource 118 (e.g., a disk via an I/O manager 120).").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Douceur</u> into the teaching of <u>Beghtel</u> to

include wherein the derived throttling level is enforced by reducing the amount of memory used

by the at least one utility. The modification would be obvious because one of ordinary skill in the

art would be motivated to limit the amount of work performed by the task.

As per **Claim 8**, the rejection of **Claim 2** is incorporated; however, <u>Beghtel</u> does not

disclose:

-   wherein the derived throttling level is enforced by changing the granularity of

locking.

<u>Douceur</u> discloses:

-   wherein the derived throttling level is enforced by changing the granularity of locking

(see Column 5: 31-35, "To avoid interfering with foreground processes via file locking conflicts,

opportunistic locks are used by the groveler 60 when accessing a file, which temporarily suspend

access to the file by another process until the groveler 60 can release it.").

Therefore, it would have been obvious to one of ordinary skill in the art at the time the

invention was made to incorporate the teaching of <u>Douceur</u> into the teaching of <u>Beghtel</u> to

include wherein the derived throttling level is enforced by changing the granularity of locking.

The modification would be obvious because one of ordinary skill in the art would be motivated to prevent threads from interfering with each other's work *(see Douceur – Column 5: 31-35).*

As per **Claim 9**, the rejection of **Claim 2** is incorporated; and <u>Beghtel</u> further discloses:

- wherein the derived throttling level is enforced by reducing the amount of processing accomplished by the at least one utility *(see Paragraph [0027], "Following the calculation of a suspension time in step 340, high priority task 210 is suspended, in step 345, for the duration of this calculated suspension time.").*

As per **Claim 11**, the rejection of **Claim 2** is incorporated; and <u>Beghtel</u> further discloses:

- wherein the derived throttling level is enforced by reducing an operating system priority of the at least one utility *(see Paragraph [0010], "Prior to initiating the next unit of work for the computer task, the computer task is suspended for the calculated suspension time. In this manner, other important computing tasks operating in the computer system have access to critical computer resources during the suspension period.").*

Claims 12-14, 16-20, and 22 are method claims corresponding to the system claims above (Claims 1-3, 5-9, and 11) and, therefore, are rejected for the same reasons set forth in the rejections of Claims 1-3, 5-9, and 11.

Claim 23 is a program storage device claim corresponding to the system claim above (Claim 1) and, therefore, is rejected for the same reason set forth in the rejection of Claim 1.

Response to Arguments

13.   Applicant's arguments filed on September 22, 2008 have been fully considered, but they

are not persuasive.

In the Remarks, Applicant argues:

a)   Regarding the Beghtel reference, Applicants respectfully submit that Beghtel cannot

account for the deficiencies of Douceur as discussed previously. Applicants point out that while

at first glance, Beghtel appears to provide for a similar insertion of the derived throttling level

(i.e., self-throttling approach), the approach in Beghtel stands in stark contrast to the self-

throttling of the instantly claimed invention. Beghtel, as best understood, appears to be

concerned with the implementation of self-throttling, whereas the present invention is focused on

the infrastructure and dynamic updating behind self- throttling. (See, e.g., Beghtel Figure 3 and

accompanying description; Specification Figures 7 and 8 and accompanying text.) Furthermore,

it is clear from the same comparable figures that the throttle specification of Beghtel is received

from outside of the loop at the start of task execution. Whereas in the comparable throttle

specification of the present invention it is clear that that throttle specification is dynamically

updated until the task is finished. (See e.g., Specification page 20, lines 17-20: "several iterations

of the work loop of the utility".)

Examiner's response:

a)   Examiner disagrees. With respect to the newly added claimed limitation of "wherein

inserting the derived throttling level is updated dynamically through several iterations of a work

loop until said at least one utility has completed its work," the Examiner respectfully submits that

Beghtel clearly discloses "wherein inserting the derived throttling level is updated dynamically

through several iterations of a work loop until said at least one utility has completed its work"

(see Figure 3; Paragraph [0025], "In step 320, this unit of work is executed by task 210 and

upon completion of this unit of work, in step 325, the operating system service to note the system

clock time is invoked once again."; Paragraph [0027], "Following the exhaustion of the

calculated suspension time, high priority task 210 is resumed in step 350 and control then

returns to step 320 to repeat this process with the next unit of work. Returning now to step 335, if

the last unit of work was completed, high priority task 210 terminates (step 355).").

Therefore, for at least the reason set forth above, the rejections made under 35 U.S.C. §

103(a) with respect to Claims 1, 12, and 23 are proper and therefore, maintained.

Conclusion

14.   The prior art made of record and not relied upon is considered pertinent to Applicant's

disclosure.

15.   Any inquiry concerning this communication or earlier communications from the

Examiner should be directed to Qing Chen whose telephone number is 571-270-1071. The

Examiner can normally be reached on Monday through Thursday from 7:30 AM to 4:00 PM.

The Examiner can also be reached on alternate Fridays.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Wei Zhen, can be reached on 571-272-3708. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the TC 2100 Group receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Q. C./

Examiner, Art Unit 2191

/Wei Y Zhen/

Supervisory Patent Examiner, Art Unit 2191